Morocco - Secondary Education

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Overview

Identification

COUNTRY
Morocco

EVALUATION TITLE
Secondary Education

TRANSLATED TITLE
Compact II au Maroc: l'employabilité et le foncier/le projet Éducation et formation pour l'employabilité/l'activité Éducation secondaire

EVALUATION TYPE
Independent Evaluation

ID NUMBER
DDI-MAR-MCC-IE-SECONDEDU-2018-v01

Overview

ABSTRACT
The Millennium Challenge Corporation (MCC) and the Government of Morocco (GoM) are addressing education and employment shortfalls in Morocco through the Morocco Employability and Land Compact, which was signed in November 2015 and entered into force in June 2017. The Compact consists of two projects – The Education and Training for Employability and the Land Productivity Projects. The Education and Training for Employability project consists of two Activities: The Morocco Secondary Education Activity and a Workforce Development Activity.

Mathematica is responsible for evaluating the Secondary Education Activity that seeks to improve the quality and workplace relevance of secondary education through several interventions, which begins in 2018 and will continue through 2022 in three regions in Morocco: Tanger-Tétouan-Al Hoceima; Marrakech-Safi; and Fès-Meknès. These interventions include (1) school-based interventions, such as developing a more autonomous and performance-based school management, revising the secondary education pedagogy to help develop transferable skills in students, and improving the quality of infrastructure in secondary schools (MIAES); (2) strengthening the national education policy environment and information systems to use assessment results to drive educational decision making (MASSAR); and (3) developing a system to operate and maintain school infrastructure nationwide (O&M). The goal of the reforms is to ensure that students acquire skills that improve their chances of transitioning into the Moroccan labor market.

The research questions that we will study through a rigorous evaluation and a qualitative study are related to understanding (1) impacts of the different intervention activities on students, teachers, and schools and (2) how the different intervention activities cause change in the experiences and behaviors of these actors as well as in the education system in Morocco. To answer these questions we will conduct a mixed-methods evaluation that includes an RCT of the MIAES and a qualitative study of all three subactivities. The mixed-methods approach will allow us to bring together quantitative and qualitative methods to strengthen the validity and reliability of our findings.

EVALUATION METHODOLOGY
Randomization

UNITS OF ANALYSIS
Individual level

KIND OF DATA
Sample survey data [ssd]

TOPICS

Topic	Vocabulary	URI

Topic	Vocabulary	URI
Education	MCC Sector	

KEYWORDS
Secondary Education, Morocco Secondary Education Activity, Integrated School Improvement Model, Education Management Information System, School Infrastructure, Equipment Operations and Maintenance, randomized control trial, qualitative study, water, sanitation, and hygiene, school improvement plan, school leadership, school management, performance management, teacher training, pedagogical innovation, student assessment, private sector-skills, soft skills, technical skills, language skills, information and communication technology, literacy, numeracy, employability

Coverage

GEOGRAPHIC COVERAGE
Activity 1 (MIAES) covers 3 regions in Morocco: Tanger-Tétouan-Al Hoceima; Marrakech-Safi; and Fès-Meknès.

Activity 2 (MASSAR) and Activity 3 (O&M) have a national coverage.

UNIVERSE
The study population includes all students and teachers in schools eligible to receive the MIAES intervention. We will estimate the causal impacts of the MIAES activity using a randomized controlled trial. We have randomly assigned schools to a treatment group or control group. We conducted random assignment via a public lottery in Morocco. The steps we followed to conduct the lottery included:

1) Group eligible schools into strata. The first step was to group the lower secondary (LS) and upper secondary (US) schools by strata: province, urban or rural status, and school type (whether LS or US). We then randomly assigned eligible schools as follows:

Eligible LS schools are randomly assigned to a treatment or control group, using strata defined by province and urban or rural status.

Eligible US schools are randomly assigned to a treatment or control group, using strata defined by province (and by urban or rural status if feasible).

2) Calculate the number of schools to select for treatment in each stratum. Across all three regions, 90 will receive MIAES, divided roughly evenly across regions. In Tanger-Tétouan-Al Hoceima, 34 schools will receive the program, of which 6 are pilot schools that did not participate in random assignment. 28 schools were therefore selected in each of the three regions. We used the following approach to determine the number of schools to assign to treatment by stratum: First, the project stakeholders determine through consultation and discussion how many US and LS schools would be selected. Of the 28 schools to be selected to receive MIAES in each region through random assignment, 19 LS schools and 9 US schools would be selected, as determined by MCC, MCA-M, and the MENFP. This is roughly proportional to the number of each type of school that is eligible.

We then determined the breakdown of LS and US treatment schools by urban and rural area within each province. We divide the number of allocated treatment schools in each group-LS-urban, LS-rural, and US-across provinces in proportion to the number of eligible schools in each province. The breakdown is based on the proportion of the number of eligible schools in each secondary school level. For example, in Tanger-Tétouan-Al Hoceima, 72 percent of all eligible LS schools are in an urban area. Hence, 14 urban LS (that is, 72 percent of 19) and 5 rural LS schools would be assigned to the treatment group (after rounding). Because there were limited numbers of rural US schools in the three different regions, we did not separate those schools into a different stratum.

3) Conduct lotteries for schools in a public ceremony. The final step is to hold a public lottery for random assignment. We organized a public ceremony with school authorities and representatives of the MENFP to ensure that the random assignment process is transparent in all regions. We conducted random assignment by drawing wooden blocks from bags. Each school is assigned a block. The blocks are then placed in bags that represent the strata. School authorities take turns selecting wooden blocks. The schools chosen in the lottery receive the MIAES interventions.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Mathematica Policy Research	

FUNDING

Name	Abbreviation	Role
Millennium Challenge Corporation	MCC	

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Mathematica Policy Research	MPR		Independent Evaluator

DDI DOCUMENT VERSION
Evaluation Design Report, Version 1

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MCC Compact and Program

COMPACT OR THRESHOLD
Morocco Compact II

PROGRAM
The Millennium Challenge Corporation (MCC) and the Government of Morocco (GoM) are addressing education and employment shortfalls in Morocco through the Morocco Employability and Land Compact, which was signed in November 2015 and entered into force in June 2017. The Compact consists of two projects - The Education and Training for Employability and the Land Productivity Projects. The Education and Training for Employability project consists of two Activities: The Morocco Secondary Education Activity and a Workforce Development Activity. The Morocco Secondary Education Activity consists of three subactivities: 1) Integrated School Improvement Model (known as MIAES for its French name, Modèle Intégré d'Amélioration des Etablissements de l'Enseignement Secondaire). The education consultant2 will work with the Ministry of National Education and Vocational Training (MENFP) and with regional officials from the Regional Academy of Education and Training (AREF) to implement MIAES in 90 to 100 LS and US schools across the regions of Tanger-Tétouan-Al Hoceima, Fès-Meknès, and Marrakech-Safi. These school-level interventions include (1) developing and implementing school improvement plans (SIPs) to increase education quality and decrease gender and socioeconomic inequities at the school level through engagement of the community in decision making; (2) conducting capacity-building programs to improve school leadership and teachers' pedagogical delivery methods; and (3) improving school infrastructure (for example, classroom construction; water, sanitation, and hygiene [WASH] facilities). The GoM is also establishing a Partnership Fund to provide additional interventions and support to a subset of schools in the MIAES regions. 2) Student Assessment and Education Management Information System (EMIS). This subactivity is comprised of two components that will be implemented nationwide. First, it provides support for the development and implementation of rigorous national and international student assessments as well as the use of the data to inform GoM's decision making. Second, it includes technical assistance to improve the existing EMIS, called MASSAR. 3) School Infrastructure and Equipment Operations and Maintenance (O&M). Interventions for this subactivity include (1) technical assistance to develop a new national approach to school infrastructure development, operations, and maintenance; (2) capacity building for regional actors engaged in the subactivity to support implementation of O&M; and (3) pilot testing of the use of performance contracts to maintain and operate school infrastructure and information technology.

MCC SECTOR
Education (Edu)

PROGRAM LOGIC
The program logic presents a series of (hypothesized) causal links among program inputs and immediate, medium-term, and long-term outcomes that support the activity's overarching goal of enhancing access, appeal, quality and relevance of education in Morocco. Each of the links in the program logic represents an assumption by the program designers about how activities will affect the compact's beneficiaries and stakeholders-which include students, teachers, school administrators, businesses, and policymakers in relevant ministries and centers. The MIAES subactivity is founded on an integrated school model that addresses multiple aspects of the school environment to improve student engagement and help them learn

workplace-relevant skills. The MIAES supports and enhances school leadership, invests in improving the school environment, engages the community in decision making about the school through the development of school improvement plans, and prepares teachers to use active and student centered teaching methods. If successful, this package of interventions is expected to improve teaching methods, contribute to a more autonomous and participatory school management, increase extracurricular depth of the school program by providing additional activities or classes for students, and lead to a better learning environment. These improvements will lead to higher quality education, increased enrollment and retention of students, and improved learning outcomes. Teachers will be expected to improve their use and delivery of soft skills, which will help students develop workforce-relevant skills that will facilitate their transition into the workforce. The assessment and EMIS subactivity seeks to improve the ways in which the Government of Morocco rigorously assesses the quality of education and improves the decision making process at all levels of the educational system. First, feedback for teachers on student performance through participation in nationwide assessments of student knowledge helps them understand the skills their students need to strengthen in the classroom. Second, results from assessments help policymakers understand overall student performance and develop capacity-building programs for teachers to improve weak content areas. Finally, accurate and up-to-date EMIS data assist policymakers in allocating resources to support the education system from top to bottom, which ensures that schools can retain students and help them learn. These contribute to a more results driven education system. Although the literature establishes that developing and using a results-driven system improves student learning, the key to success includes a strong focus on training teachers to use the assessment results to adapt their pedagogical delivery and support students who show poor results. It is also important for school directors and policymakers to clearly communicate results to communities so that people in the communities can hold schools accountable for results. The O&M subactivity aims to improve the maintenance of school infrastructure nationwide, and will complement the infrastructure improvements under the MIAES. The improved O&M practices expected as a result of the O&M interventions should lead to better management of financial and infrastructure assets as well as to a better learning environment, and thus contribute to improved student retention and learning.

PROGRAM PARTICIPANTS

The main participants in Activity 1 (MIAES) are lower and upper secondary school stakeholders in Tanger-Tétouan-Al Hoceima, Fès-Meknès, and Marrakech-Safi who participate in activities such as school improvement plans, capacity-building programs, improved school infrastructure, including (1) directors and teachers and (2) their students, who may benefit from improved school management and teachers' pedagogical delivery methods. Participants in Activity 2 (EMIS) and Activity 3 (O&M) are national and regional education officials, school directors, teachers, and students in schools across Morocco.

Sampling

Study Population

The study population includes all students and teachers in schools eligible to receive the MIAES intervention. We will estimate the causal impacts of the MIAES activity using a randomized controlled trial. We have randomly assigned schools to a treatment group or control group. We conducted random assignment via a public lottery in Morocco. The steps we followed to conduct the lottery included: 1) Group eligible schools into strata. The first step was to group the lower secondary (LS) and upper secondary (US) schools by strata: province, urban or rural status, and school type (whether LS or US). We then randomly assigned eligible schools as follows: Eligible LS schools are randomly assigned to a treatment or control group, using strata defined by province and urban or rural status. Eligible US schools are randomly assigned to a treatment or control group, using strata defined by province (and by urban or rural status if feasible). 2) Calculate the number of schools to select for treatment in each stratum. Across all three regions, 90 will receive MIAES, divided roughly evenly across regions. In Tanger-Tétouan-Al Hoceima, 34 schools will receive the program, of which 6 are pilot schools that did not participate in random assignment. 28 schools were therefore selected in each of the three regions. We used the following approach to determine the number of schools to assign to treatment by stratum: First, the project stakeholders determine through consultation and discussion how many US and LS schools would be selected. Of the 28 schools to be selected to receive MIAES in each region through random assignment, 19 LS schools and 9 US schools would be selected, as determined by MCC, MCA-M, and the MENFP. This is roughly proportional to the number of each type of school that is eligible. We then determined the breakdown of LS and US treatment schools by urban and rural area within each province. We divide the number of allocated treatment schools in each group-LS-urban, LS-rural, and US-across provinces in proportion to the number of eligible schools in each province. The breakdown is based on the proportion of the number of eligible schools in each secondary school level. For example, in Tanger-Tétouan-Al Hoceima, 72 percent of all eligible LS schools are in an urban area. Hence, 14 urban LS (that is, 72 percent of 19) and 5 rural LS schools would be assigned to the treatment group (after rounding). Because there were limited numbers of rural US schools in the three different regions, we did not separate those schools into a different stratum. 3) Conduct lotteries for schools in a public ceremony. The final step is to hold a public lottery for random assignment. We organized a public ceremony with school authorities and representatives of the MENFP to ensure that the random assignment process is transparent in all regions. We conducted random assignment by drawing wooden blocks from bags. Each school is assigned a block. The blocks are then placed in bags that represent the strata. School authorities take turns selecting wooden blocks. The schools chosen in the lottery receive the MIAES interventions.

Sampling Procedure

For the quantitative impact evaluation of MIAES, the sampling approach we intend to follow includes:

Schools: All schools eligible for random assignment are a part of the study and will be included in the analyses using administrative data, and a randomly selected subsample of schools will be visited to collect survey data. We will use administrative data from the EMIS for the universe of schools that are eligible for random assignment to conduct impact analyses at the student, teacher, and student levels. In addition, we will draw a sample of each to survey for the impact analyses. We will survey all treatment schools, and stratify by using the same strata used for random assignment to draw a sample of control schools proportional to the number of schools in each stratum. Out of the projected 261 LS schools included in random assignment (57 of which will be selected for treatment), we recommend gathering survey data from a balanced sample of 57 treatment and 57 control schools. Out of the anticipated 150 US schools included in random assignment (27 of which will be selected for treatment), we recommend gathering survey data from a sample of 27 treatment and 27 control schools.

Student cohorts: Our student sample for the RCT will be the entering cohort of LS and US students in the school years right after the schools' random assignment occurs. These cohorts include the 7th- and 10th-grade students in Tanger-Tétouan-Al Hoceima in the 2017-2018 school year and the 7th- and 10th-grade students in Fès-Meknès and Marrakech-Safi in 2018-2019. We recommend following a longitudinal sample of LS and US entrants in treatment and control schools for data collection, because estimating learning impacts only from students who remain in school at the time of follow-up (such as in a cross-sectional sample) may produce biased estimates. Because of concerns about survey attrition at follow-up-especially for students-we recommend a minimum sample of 15 students and six teachers per school.

Teachers: Our teacher sample will include teachers in treatment and control schools. At baseline, we will sample teachers of core subjects who are the target of the pedagogical training program. In the treatment schools, this group represents the direct beneficiaries of teacher training. In the control schools, the teachers represent those who would have received training if their school had been selected to receive the MIAES. We recommend randomly sampling 6 teachers per school. If possible, we will follow teachers longitudinally but may use a repeated cross section if teacher turnover is as high as expected.

Questionnaires

Overview

Information will be populated at a later stage of the evaluation

Data Collection

Data Collection Dates

Start	End	Cycle
2018-05-07	2018-05-21	Baseline quantitative data collection in Tanger-Tétouan-Al Hoceima
2019-04-01	2019-05-31	Baseline quantitative data collection in Marrakech-Safi and Fès-Meknès
2020-01	2020-02	Qualitative data collection in Tanger-Tétouan-Al Hoceima, Marrakech-Safi and Fès-Meknès
2020-02	2020-03	Endline quantitative data collection in Tanger-Tétouan-Al Hoceima
2021-02	2021-03	Endline quantitative data collection in Marrakech-Safi and Fès-Meknès

Questionnaires

Information will be populated at a later stage of the evaluation

Data Collectors

Name	Abbreviation	Affiliation
Data Ingenierie	DI	

Data Processing

No content available

Data Appraisal

No content available